

ATTACHMENT II

LOUISIANA TECHNOLOGY INNOVATIONS FUND – SEMI-ANNUAL PROGRESS REPORT

September 1, 2004

[This report is due on March 1 and September 1 each year. Limit the length of the report to three pages]

I DEPARTMENT/AGENCY - LSU/Computing Services

II PROJECT TITLE / Log # 03/003

III PROJECT LEADER

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IV DESCRIPTION OF THE PROJECT

LSU was awarded this project to develop a robust, scalable environment to accelerate and facilitate the evaluation and deployment of Linux services and applications within public-supported entities in Louisiana. The move to open standards and open source is changing the world of information technology in the public and private sectors and higher education. Linux, once considered “disruptive technology” by IBM, is the leading example of open source software that implements open standards. Linux is becoming widely available on multiple hardware platforms and is now an option for many proprietary applications. Linux combined with virtualization technology offers a possible opportunity to combat the growing cost of supporting burgeoning, complex information technology infrastructures and the increasing dependence on a proprietary software platform. Recently, Linux was characterized in Computer World as a “Microsoft license killer.” Louisiana has been slow in embracing this emerging technology. The intent of this project is to maximize the opportunity to accelerate innovation with Linux, to limit dependence on proprietary systems and to focus on total cost of ownership issues.

V PROJECT STATUS

A. Brief Summary –

All hardware and software have been installed. Introductory presentations have been given to many of the state agencies and we have begun providing virtual Linux services to several interested parties.

B. Accomplishments -

Since the last report, we have migrated all existing z/VM and z/Linux systems and data from the LSU SHARK F20 storage server to the new SHARK 800 disks provided by the project.

We have installed the 64 bit version of SuSE z/Linux and configured it for use as a template from which to build new z/Linux virtual machines. Both the production and development LPARs of the z800 mainframe can now clone 32 bit and 64 bit SuSE z/Linux virtual machines. Automated cloning scripts have been developed, tested, and put into production for both environments to simplify the creation of new virtual machines. We have configured one of the system administration virtual machines as a mirror to the SuSE support site to automatically receive the latest updates and patches. A distributed command system can

issue updates and other administration commands to all the virtual machines. A web interface is now available to each machine's administrator for startups and shutdowns without the need for z/VM access.

We have installed DB2, WebSphere, and Domino, each in its own virtual machine. We have successfully tested the demonstration examples that come with each of these applications, and have copied some legacy Domino applications to this environment. Additional DB2 virtual machines are currently being tested by some state agencies.

We have completed the installation of the Velocity Software monitoring system in both LPARs and have completed basic configuration tasks. We are in the process of determining and configuring relevant alarm levels for selected operating conditions. These are implemented with SNMP modules in each virtual machine reporting back to the central Velocity Software monitors for alert distribution.

During the months of April and May we visited several state agency locations and gave presentations on the z/Linux architecture, available applications, and technical advantages, including live demonstrations of the cloning process and interaction with the resulting virtual machines. Presentations were given onsite to DOTD, DSS, DOA, DPS, SLU (in Hammond), DNR, Revenue, and Education, with a follow-up open presentation at LSU for anyone unable to attend the earlier onsite sessions. An additional session was presented to OIT at their offices on June 15.

We have implemented Tivoli Storage Manager for backups of the Linux virtual machines, making use of the tape robot expansion facilities at the ISB provided by the project. We've implemented flashcopy, a high speed disk duplication technique available on the SHARK storage unit, for daily backups of the z/VM system disks.

We have tested the ability of a z/Linux virtual machine to access disk storage over a Storage Area Network (SAN), bypassing the disk virtualization provided by z/VM. This gives direct access to much larger disks than the native 3390 architecture and is useful in targeted database and other specialty applications. Our test platform used disk space on an HP SAN-attached storage unit as well as the SHARK disk server.

C. Problems Encountered/Action Taken or Planned

No major problems. A couple of technical issues were resolved through the IBM support contract. We were pleased with the level of technical expertise and their responsiveness.

D. Major Milestones (Original vs. Current Estimate)

Currently on target with the proposed schedule

VI COST VS. BUDGET

Note – On budget per Amendment dated January 7, 2004.

	<u>Category</u>	<u>Budgeted</u>	<u>Actual</u>	<u>Projected Surplus</u>
A.	Equipment			
B.	Software			
C.	Telecommunications			
D.	Professional/Contract Services			
E.	Other Costs			

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Total Project Cost

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VII ITEMIZED EXPENSES AND FINANCIAL OBLIGATIONS INCURRED DURING THIS REPORTING PERIOD

[Include description, unit cost, quantity, and total cost for incurred expenses such as equipment, software, and telecommunications. Include contract title, name of contractor, OCR or P.O. Number, and amount for Professional Services and/or other Contract Services.]

None during this period. The following summarizes the funding expenditures. There is a current balance in the fund of \$10,430.

Description	Budget	Expenditure	Balance
Capital Outlays	(991,768)	956,343	(35,425)
Supplies	0	31,500	31,500
Operating Services	(8,000)	0	(8,000)
Travel	0	1,495	1,495
Totals	999,768	989,338	(10,430)